Claims

What is claimed is:

1. A system for treating fly and ash comprising:

a fly ash feed source;

a first combustion unit in flow communication with said fly ash feed source;

a second combustion unit in flow communication with said fly ash feed source; and

a collection vessel in flow communication with said first combustion unit and said second combustion unit.

2. The system of Claim 1, wherein said fly ash feed source comprises a feed vessel.

3. The system of claim 2, further comprising a feed line in flow communication with said feed vessel.

4. The system of claim 1, further comprising a diverter in flow communication with said fly ash feed source, said first combustion unit and said second combustion unit.

5. The system of claim 1, further comprising a collection line in flow communication with said first combustion unit, said second combustion unit and said collection vessel.

6. The system of claim 1, further comprising a controller operably connected to said fly ash feed source, wherein said controller comprises a timer.

7. The system of claim 1, wherein said first combustion unit comprises a circulating fluid bed combustor.

8. The system of claim 7, wherein said circulating fluid bed combustor comprises a separator having an inlet in flow communication with an outlet of a reactor.

9. The system of claim 8, wherein said circulating fluid comprises an accumulator in flow communication an outlet of said separator and with an inlet of said reactor.

10. The system of claim 8, wherein said circulating fluid bed combustor comprises a fluidized bed disposed in said reactor and a heat source operably connected to said reactor.

11. The system of claim 10, wherein said fluidized bed comprises particles selected from sand, alumina, silica, inert oxides and combinations thereof.

12. The system of claim 7, wherein said second combustion unit comprises a second circulating fluid bed combustor.

13. A system for reducing the concentration of carbon in fly ash comprising:

a feed vessel having an inlet in flow communication with a fly ash supply;

a diverter in flow communication with an outlet of said feed vessel;

a first combustion unit in flow communication with said diverter; and

a second combustion unit in flow communication with said diverter.

14. The system of claim 13, further comprising a collection unit in flow communication with said first combustion unit and said second combustion unit.

15. The system of claim 13, further comprising a controller operably connected to said diverter, wherein said controller comprises a timer.

16. The system of claim 13, wherein said first combustion unit comprises a circulating fluid bed combustor.

17. The system of claim 16, wherein said second combustion unit comprises a second circulating fluid bed combustor.

18. The system of claim 16, wherein said circulating fluid bed combustor comprises a fluidized bed comprising particles selected from sand, alumina, silica, inert oxides and combinations thereof.

19. A method of processing fly ash comprising:

feeding fly ash to a diverter;

diverting a first portion of the fly ash to a first combustion unit;

combusting the first portion of fly ash in the combustion unit thereby reducing the carbon content of the fly ash;

diverting a second portion of the fly ash to a second combustion unit; and

combusting the second portion of the fly ash in the combustion unit thereby reducing the carbon content of the second portion of fly ash.

20. The method of claim 19, further comprising collecting combusted fly ash from the first and the second combustion units.

21. The method of claim 19, further comprising collecting the fly ash prior to diverting a first portion of the fly ash to the first combustion unit.

22. The method of claim 21, further comprising collecting the fly ash prior to diverting a second portion of the fly ash to the second combustion unit.

23. The method of claim 19, wherein combustion of the first portion of the fly ash comprises feeding the fly ash into a fluidized bed.

24. The method of claim 23, wherein combusting the first portion of the fly ash comprises refluxing at least a portion of the combusted fly ash through the fluidized bed.

25. The method of claim 19, wherein combusting the first portion of fly ash comprises reducing the carbon content of the fly ash to up to about 2% by weight.

26. The method of claim 19, wherein feeding fly ash to the diverter is substantially continuous.

27. The method of claim 19, further comprising selecting the first portion of the fly ash prior to diverting the first portion to the first combustion unit.

28. The method of claim 19, wherein diverting the first portion of the fly ash comprises diverting fly ash to the first combustion unit for a pre-determined time period to obtain the first portion of the fly ash.

29. The method of claim 19, further comprising diverting a third portion of the fly ash to the first combustion unit after combusting the first portion of the fly ash.

30. The method of claim 29, wherein diverting a third portion of the fly ash to the third combustion unit occurs before completion of combusting of the second portion of the fly ash in the second combustion unit.

31. A method of reducing the carbon content of fly ash comprising:

diverting a first batch of fly ash to a first processing unit;

processing the first batch of fly ash in the first processing unit;

diverting a second batch of fly ash to a second processing unit;

processing the second batch of fly ash in the second processing unit; and,

collecting the first and second processed batches of fly ash.

32. The method of claim 31, further comprising collecting the fly ash prior to diverting the first batch of fly ash.

33. The method of claim 31, further comprising diverting a third batch of fly ash to the first processing unit before processing of the second batch of fly ash is completed.

34. The method of claim 31, wherein processing the first batch of fly ash comprises combusting the fly ash.

35. The method of claim 31, wherein diverting the first and second batches of fly ash is substantially continuous.